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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,130	10/17/2001	Shimman Patel	990530	5529

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Qualcomm Incorporated  
Patents Department  
5775 Morehouse Drive  
San Diego, CA 92121-1714

EXAMINER

DO, CHAT C

ART UNIT

PAPER NUMBER

2193

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/981,130

Applicant(s)

PATEL ET AL.

Examiner

Chat C. Do

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 19-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This communication is responsive to Amendment filed 01/10/2005.
2. Claims 1-10 and 19-23 are pending in this application. Claims 1, 10, 19, and 21 are independent claims. In Amendment, claims 11-18 are cancelled and claims 19-23 are added. This Office Action is made final.

#### ***Specification***

3. The disclosure is objected to because of the following informalities:

Throughout the claims, the applicant is advised to maintain same format wherein all the citations in the parenthesis “(…)” are references only. These references will not be considered as part of the claims (e.g. see claim 19 lines 8-9).

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-10 and 19-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 1, the limitation “feeding M’ back to the first means to evaluate M’ modulo J” in lines 7-8 is unclear because the first means is unknown and the claim purpose is to evaluate M modulo J, not M’ modulo J. For examination purposes, the examiner considers the limitation as “feeding M’, as M, back to the first circuit and repeat to evaluate M modulo J”. Claims 10, 19, and 21 have the same rejection.

Thus, claims 2-9, 20, and 22-23 are also rejected for being dependent on the rejected base claims 1, 19, and 21 respectively.

### *Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3, 5-6, and 10 are rejected under 35 U.S.C. 103(a) as being obvious over Takenaka et al. (U.S. 5,499,299) in view of Iwamura (U.S. 5,313,530).

Re claim 1, Takenaka et al. disclose in Figure 2 a system for evaluating M modulo J, where J is an integer and M is an integer N expressed in binary form, where alpha, is 0 or 1, and N+1 is the number of digits in a binary word (abstract wherein T mod N) comprising: a first circuit (1) for decomposing M into two integers A and B wherein  $B = M - A$ , the first circuit comprising a circuit passes  $B_n$  to the second circuit on a first iteration and passes  $B_i$  on all subsequent iterations, where i is an iteration counter starting with N and counting down (Figure 2 with n times loop); a second circuit (2 and

col. 8 lines 32-35) for evaluating  $(A \text{ modulo } J)$ ; a third circuit (3) for evaluating  $M' = (A \text{ modulo } J) + B$ ; and a fourth circuit for outputting  $M'$  (4) or feeding  $M'$  back to the first means to evaluate  $M' \text{ modulo } J$  (n times loop). Takenaka et al. do not disclose in Figure 2 a multiplexer for multiplexing different input into the circuit. However, Iwamura also discloses in Figure 11 a multiplexer (e.g. 105) for selecting  $M$  value into the modulo circuit in the initial step. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to add a multiplexer as seen in Iwamura's Figure 11 into Takenaka et al.'s invention because it would enable to simplify the circuitry for performing integer modulo.

Re claim 3, Takenaka et al. further disclose in Figure 2 the second circuit comprising a look-up table configured to stores  $C = 2 \text{ modulo } J$  for  $i = 0$  to  $N$  (col. 8 lines 30-37).

Re claim 5, Takenaka et al. further disclose in Figure 2 the third circuit (3) includes an adder (3) whose inputs are  $B$  (output direct from  $T$  register) and  $(\alpha * C)$  (output of 5) and which passes its output  $M' = B_i + (\alpha * C)$  to the fourth circuit (4).

Re claim 6, Takenaka et al. further disclose in Figure 2 the fourth circuit includes a multiplexer  $M4$  that passes  $M'$  as a final output if  $(M' < J)$  (output of 4); otherwise  $i$  is set to  $i-1$ , and  $M'$  is fed back to the first circuit (n times loop).

Re claim 10, it is a system claim of claim 1. Thus, claim 10 is also rejected under the same rationale as cited in the rejection of rejected claim 1.

***Allowable Subject Matter***

8. Claims 4, 7-9, and 19-23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

9. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (571) 272-3721. The examiner can normally be reached on M => F from 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C. Do  
Examiner  
Art Unit 2193

August 12, 2005

  
KAKALI CHAKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100